Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Higginsville South Lake

Waterbody Segment at a Glance:


State map showing location of watershed

County: Lafayette
Nearby Cities: Higginsville, Concordia
Area of impairment: 223 Acres
Pollutant: Atrazine
Source: Corn, Sorghum Production

Note: Higginsville South Reservoir is proposed for deletion from the 2002 303(d) list.

TMDL Priority Ranking: Medium

Description of the Problem

Beneficial uses of Higginsville South Lake:

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption
- Boating and Canoeing
- Drinking Water Supply

Use that is impaired

- Drinking Water Supply

Standards that apply

- The impairment of this lake is based on exceedence of the specific criterion of 3 micrograms per liter (µg/L) atrazine, as an average of the period of record, contained in Missouri's Water Quality Standards 10 CSR 20-7.031 Table A.

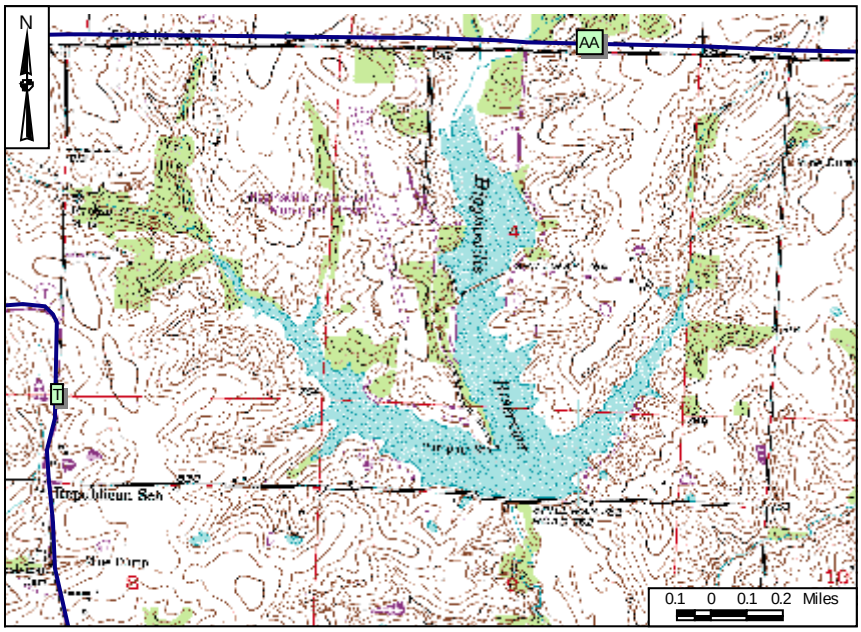
The Higginsville Reservoir system consists of approximately 194 acres of water. The city sells wholesale, treated water from the lake to several nearby towns and to the Lafayette-Johnson-Saline Public Water Supply District #2 for distribution to the rural area, serving approximately 9,300 people. Runoff from residential, golf course and corn and sorghum production areas in the watershed has resulted in measurable amounts of atrazine and other herbicides being detected within the lake.

Atrazine is a widely used herbicide for control of broadleaf weeds. It is the most heavily used herbicide used on corn and sorghum in Missouri. Since 1993, its uses have been greatly restricted.

Atrazine is considered a possible human carcinogen, so the state standard is set at the very low level of three µg/L, or parts per billion. Missouri Department of Natural Resources, Monsanto Inc., and Novartis Inc. have taken measurements of atrazine in the lake. Atrazine concentrations in the lake commonly exceed the state limit of 3 µg/L in past years, but the long term average atrazine level in the lake is now 2.32 µg/L and the lake is proposed for deletion from the 303(d) list.

The Higginsville City Lake Watershed Steering Committee maintains an informational Web site that can be accessed at: www.ctic.purdue.edu/kyw/tmdl/TipsAndHints/Planindex.html . The following information contains a map of the lake area and tables that summarize the existing data.

Higginsville Lake in Lafayette County, Missouri



Average Annual Atrazine Concentrations in Higginsville Lake, 1992-2000 (µg/L)

1992	1.05
1997	3.45
1998	1.06
1999	0
2000	1.23

Source: Missouri Department of Natural Resources

Monthly Atrazine Concentrations in Higginsville Lake, 1997

(µg/L)

January	1.16
March	0.53
April	2.64
May	4.7
June	4.66
July	4.49

Source: Monsanto Inc.

Average Annual Atrazine Concentrations in Higginsville Lake, 1995-1999

(µg/L)

1995	2.9
1996	3.38
1997	3.69
1998	0.85
1999	2.04

Source: Novartis Inc.

Average Monthly Atrazine Concentrations in Higginsville Lake, 1995-1999

(µg/L)

January	1.75
February	1.82
March	1.38
April	2.02
May	3.58
June	3.72
July	3.08
August	2.84
September	2.98
October	2.54
November	2.38
December	2.13

Source: Novartis Inc.

For more information call or write:

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